

REMARKS

The claims were rejected for double patenting. Applicant requests reconsideration. A terminal disclaimer is provided herewith.

The claims were rejected for imparticularity. Applicant requests reconsideration. The claims have been accordingly amended. New claim 18 was added for indicating that the routing information is communicated in a packet as a routing item.

The claims 1-4, 6, 8, 11, 12, and 14-17 were rejected as unpatentable over Jordan in view of Husak. The remaining Claims 7, 10, and 13 were rejected as unpatentable over Jordan in view of Husak in view of Berstis, aka, Bertis. Applicant requests reconsideration.

The claims are enabled by the specification and have at least three generating steps, an associating step, and a transmitting step, all occurring at a location, the proximal IPA location. These process steps occur at the proximal IPA, and not by the proximal IPA, the originating IPA, or the destination IPA. An IPA is a location and not a thing. The claims particularly claim the invention. Independent claims 1, 8, and 12 recite that the routing information containing and associating a URL-Id and source IPA are communicated to a destination at a destination IPA. The URL-Id identifies an originating web server whereat the web content data was originally stored. As the web content data is cached at other sources, the sourcing IPA in the routing information does not, as

1 in the prior art, point to the originating web servers indicated by
2 the URL, but rather, points to another source at a sourcing IPA.
3 The present invention teaches the transmission of routing
4 information to a destination IPA where the routing information
5 includes a URL-Id of an originating web server storing the sought
6 after web content data and a sourcing IPA where the web content
7 data is alternatively stored. The caching of the original web
8 content data at alternative source locations, and the broadcasting
9 of the routing information, enable and define a cooperative web
10 cache network for efficient retrieval of web content data. The
11 invention teaches associating an originating URL with a sourcing
12 IPA as routing information that is broadcasted, typically in a
13 packet, to a distal IPA.

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15 By communicating from a proximal IPA routing information that
16 associates a stored URL-Id of sought after web content data with a
17 sourcing IPA storing that URL-Id web content data to a distal
18 destination IPA, the distal destination IPA can build a web
19 forwarding table, even though the proximal or destination caches do
20 not even store the sought after web content data. By broadcasting
21 these associations, any server receiving the routing information
22 can construct a web content storage network of cooperative caches
23 storing sought after web content data and storing a forwarding and
24 routing table.

25
26 The present invention solves the problem of maintaining a
27 network of cooperative caches, any one of which can be used to
28 retrieve stored web content data, and solves this problem by

1 transmitting to a destination at a destination IPA routing
2 information that associates the URL-Id and source IPA. The
3 destination and proximal cache need not necessarily store the
4 sought after web content data, but only maintain routing items that
5 define where the web content data is stored among the cooperative
6 caches. As such, the present invention solves the problem of
7 cooperative cache maintenance by broadcasting associated
8 information as part of a forwarding and routing table, so as to
9 migrate the forwarding and routing table about the cooperative
10 caches. This migration occurs without regard to loading of any one
11 cache. The loading is addressed by Jordan.

12
13 Jordan teaches a load-balancing network of cooperative caches
14 that store web content data. Jordan does not solve the problem of
15 migrating forwarding tables from one cache to another, nor uses the
16 solution of transmitting routing information associating a URL-Id
17 with a source IPA of the source storing the URL-Id web content data
18 so as to migrate the forward and routing table about the
19 cooperative caches. Rather, Jordan teaches that when a cache is
20 overloaded by a request, the request is simply directed to a
21 destination at a destination IPA, so that, the destination becomes
22 the "owner" of the web content data and a new source, such that,
23 the destination can then retrieve the web content data, store it
24 locally, and then respond to the request for the web content data.
25 Jordan does not solve the problem of migrating a forwarding table
26 among cooperative caches, nor the invented solution of sending
27 routing information associating URL-Id web content data and a
28 source of the web content data.

1
2 In Jordan, a proximal cache at a proximal IPA, receives a
3 request for URL web content data from an originator. When the
4 proximal cache at the proximal IPA is overloaded, the proximal IPA
5 directs the original request to the destination IPA. The request
6 contains an association between the originating IPA of the
7 originator requesting the web content data and the URL-Id. The
8 destination then becomes the "owner," that is, that selected cache
9 to serve URL-Id requests for a particular sought after URL data.
10 The destination can then retrieve the URL-Id web content data and
11 store it locally, and update its forwarding table indicating it has
12 this URL-Id and web content data. Jordan does not teach a means for
13 broadcasting routing information, including an association between
14 URL-Id and source of the URL-Id web content data, but rather merely
15 directs the request to an unloaded server. Jordan does not teach a
16 method of broadcasting this association to an arbitrary
17 destination, which can then reconstruct a forwarding table.

18
19 Applicant concedes that hop metrics and hashing are well known
20 functions, but have not heretofore been in combination with
21 migrating a forwarding and routing table by broadcasting
22 association between a URL-Id and a source.

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1 The cited references do not teach nor suggest the migration of
2 forwarding and routing tables using broadcasted associations of URL
3 identifiers and an alternative source of the web content data.
4 Allowance of the claims is requested.

7 Respectfully Submitted

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